

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A computer system to provide one or more product selections to a user in accordance with ~~an analysis of user needs~~ product related data provided by the user, the computer system comprising:

- a database storing product configuration information, wherein the product configuration information comprises product identifier information corresponding to product attribute information ~~and pre-generated~~ for multiple product configurations;
- a memory;
- a processor coupled to the memory and the database;
- a data receiving module, stored in the memory, to receive the product related data from the user through a communication link coupled between a data processing system of the user and the data receiving module; ~~wherein the product related data is a member of a group of information types comprising product attribute information and product identifier information;~~
- ~~a needs analysis module, stored in the memory, to process the received product related data and to determine which type of information is included in the received product related data;~~
- a filter service module, stored in the memory, ~~to process product attribute information received by the needs analysis module in accordance with the product configuration information stored in the database in order to~~ (i) receive one or more product attributes and (ii) identify one or more of the pre-generated product configurations stored in the database that each include the one or more product attributes, if the product related data represents the one or more product attributes meet requirements of the received product attribute information;
- a configuration service module, stored in the memory, to (i) receive a product identifier and process product identifier information received by the needs analysis module to (ii) identify each combination of attributes stored in the database that corresponds to the product identifier, if the product related data represents the product identifier one or more of the pre-generated product configurations stored in the database that corresponds to the received product related data; and

30 a presentation module, stored in the memory, to (i) provide each identified ~~pre-generated~~
31 product configuration as a product selection to the user via the communication
32 link if the product related data represents the one or more product attributes and
33 (ii) provide one or more product selections to the user via the communication link,
34 wherein, if the product related data represents the product identifier, each product
35 selection represents a product identifier and a respective combination of attributes
36 identified as corresponding to the product identifier.

1 2. (Currently amended) The computer system of claim 1 wherein the
2 product configurations are pre-generated product configurations, the computer system further
3 comprising:

4 a software configuration engine stored in the memory to generate the pre-generated
5 product configurations.

1 3. (Currently amended) The computer system of claim 1 wherein the data
2 receiving module is further configured to receive data indicating a user selected product,
3 wherein the selected product corresponds to one of the identified ~~pre-generated~~ product
4 configurations, and the data receiving module is further configured to receive product
5 configuration selections from the user to further configure the selected product, the computer
6 system further comprising:

7 a software configuration engine, stored in the memory, to generate configured product
8 data corresponding to the product configuration selections associated with the
9 selected product and in accordance with the product configuration information;
10 and

11 wherein the presentation module is further configured to present the configured product
12 data to the user via the communication link.

13 4. (Currently amended) The computer system of claim 1 wherein the product
14 configurations are pre-generated product configurations, the system further comprising a
15 needs analysis module, stored in the memory, to (i) process the received product related data
16 and (ii) determine which of the service modules to provide the product related data, wherein;
17 said filter service module is further configured to provide a product identifier to said

18 needs analysis module in response to attribute information one or more product
19 attributes received from said needs analysis module,
20 said product identifier identifies a pre-generated product configuration, and
21 said attribute information is each of the one or more product attributes is an attribute of
22 said pre-generated product configuration.

1 5. (Currently amended) The computer system of claim 4, wherein
2 said filter service module is further configured to use said attribute information one or
3 more product attributes to retrieve said product identifier from said database.

1 6. (Currently amended) The computer system of claim 1, wherein said
2 database contains product identifier information that identifies each ~~pre-generated~~ product
3 configuration and reference data that links the product attribute information one or more
4 product attributes to a ~~pre-generated~~ product configuration.

1 7. (Currently amended) The computer system of claim 6, wherein the
2 product configurations are pre-generated product configurations and said database comprises:
3 a configuration table storing the pre-generated product configurations; and
4 an attribute table storing the ~~product attribute information one or more product attributes~~.

1 8. (Currently Amended) The computer system of claim 7, wherein said
2 configuration table contains said product identifier ~~information and~~.

1 9. (Currently Amended) The computer system of claim 7, wherein the
2 product configurations are pre-generated product configurations and
3 said attribute table comprises an attribute record comprising an attribute field containing
4 said product attribute information one or more product attributes, and an
5 intersection field containing a reference to at least one of the pre-generated
6 product configurations, and
7 said configuration table comprises a configuration record comprising a configuration
8 field containing said pre-generated product configurations; and an identifier field
9 containing said product identifier ~~information~~.

1 10. (Currently Amended) The computer system of claim 9, wherein

2 each pre-generated product configuration describes a configuration of a product that is an
3 allowable product configuration in accordance with product rules
4 governing allowable combinations of product attributes,
5 said attribute information describes an attribute of said product, and
6 said pre-generated product configuration of said product includes said ~~attribute of said-~~
7 product one or more product attributes.

1 11. (Currently Amended) The computer system of claim 9, the system further
2 comprising a needs analysis module, stored in the memory, to (i) process the received product
3 related data and (ii) determine which of the service modules to provide the product related
4 data, wherein
5 said needs analysis module is configured to access said product configuration information
6 through said filter service.

1 12. (Currently Amended) The computer system of claim 9, wherein
2 said reference allows said filter service module to access said configuration record by
3 virtue of said filter service module being configured to access said attribute record
4 using said ~~attribute information~~ one or more product attributes.

1 13. (Currently Amended) The computer system of claim 1, the system further
2 comprising a needs analysis module, stored in the memory, to (i) process the received product
3 related data and (ii) determine which of the service modules to provide the product related
4 data, and wherein said needs analysis module is configured to permit identification of at least
5 one of the ~~pre-generated~~ product configurations based on the product identifier information.

1 14. (Canceled).

1 15. (Currently Amended) The computer system of claim 1, the system further
2 comprising a needs analysis module, stored in the memory, to (i) process the received product
3 related data and (ii) determine which of the service modules to provide the product related
4 data, and wherein said configuration service module is configured to provide a configuration
5 list to said needs analysis module in response to a product identifier received from said needs
6 analysis module.

1 16. (Currently Amended) The computer system of claim 15, wherein
2 said configuration list is a list of the available ~~features~~ product attributes of said product.

1 17. (Previously Presented) The computer system of claim 15, wherein
2 said configuration list is a list of configurations of said product.

1 18. (Previously Presented) The computer system of claim 15, wherein
2 said configuration service is configured to use said product identifier to generate said
3 configuration list from information stored in said database.

1 19. (Previously Presented) The computer system of claim 1, wherein
2 said database contains product identifier information.

1 20. (Currently Amended) The computer system of claim 19, wherein said
2 database comprises:
3 a configuration table containing said product identifier ~~information~~ and said product
4 configuration information.

1 21. (Currently Amended) The computer system of claim 20, the system
2 further comprising a needs analysis module, stored in the memory, to (i) process the received
3 product related data and (ii) determine which of the service modules to provide the product
4 related data, and wherein
5 said needs analysis module is configured to access said ~~pre-generated~~ product
6 configuration information through said product identifier ~~information~~ to said
7 configuration service module, and
8 said configuration service module is configured to access said database by virtue of being
9 configured to access said database using said product identifier ~~information~~.

1 22. (Currently Amended) The computer system of claim 20, wherein the product
2 configurations are pre-generated product configurations and said configuration table
3 comprises a configuration record comprising
4 a configuration field containing said pre-generated product configurations, and
5 an identifier field containing said product identifier ~~information~~.

1 23. (Currently Amended) The computer system of claim 22, wherein
2 said pre-generated product configurations ~~describes describes~~ describe a product
3 previously configured and saved by the user, and
4 said product identifier ~~information~~ identifies said configuration of said product.

1 24. (Currently amended) A computer program product encoded in a
2 computer readable medium, the computer program product comprising code executable on a
3 computer system to provide one or more product selections to a user in accordance with ~~an~~
4 ~~analysis of user needs~~ product related data provided by the user, the code comprising
5 instructions to:
6 receive the product related data from the user through a communication link coupled
7 between a data processing system of the user and the computer system, ~~wherein~~
8 ~~the product related data is a member of a group of information types comprising~~
9 ~~attribute information and product identifier information;~~
10 access a database storing product configuration information, wherein the product
11 configuration information comprises product identifier information corresponding
12 to product attribute information for multiple product configurations;
13 ~~process the received product related data;~~
14 ~~determine which type of information is included in the received product related data;~~
15 ~~process, if the product related data is attribute information, the received product related~~
16 ~~data in accordance with product configuration information in order to receive one~~
17 or more product attributes and identify one or more of the pre-generated product
18 configurations stored in [[a]] the database that each include the one or more
19 product attributes, if the product related data represents the one or more product
20 ~~attributes meet requirements of the received attribute information;~~
21 receive a product identifier and identify each combination of attributes stored in the
22 database that corresponds to the product identifier, if the product related data
23 represents the product identifier one or more of the pre-generated product
24 ~~configurations that corresponds to the received product related data, if the product~~
25 ~~related data is product identifier information represents the product identifier; and~~
26 provide each identified pre-generated product configuration as a product selection to the

user via the communication link if the product related data represents the one or more product attributes; and
provide one or more product selections to the user via the communication link, wherein,
if the product related data represents the product identifier, each product selection
represents a product identifier and a respective combination of attributes
identified as corresponding to the product identifier.

25. (Currently amended) The computer program product of claim 24,
wherein the code further comprises code to permit identification of a product based on
~~attribute information~~ the one or more product attributes.

26. (Currently amended) The computer program product of claim 24,
wherein the code further comprises code to:
receive data indicating a user selected product, wherein the selected product corresponds
to one of the ~~identified pre-generated product configurations~~ product selections;
receive product configuration selections from the user to further configure the selected
product;
generate configured product data corresponding to the product configuration selections
associated with the selected product and in accordance with product rules stored
in a memory that govern allowable combinations of the product features; and
provide the configured product data to the user via the communication link.

27. (Currently amended) The computer program product of claim 26,
wherein the product configurations are pre-generated product configurations and the code
~~further comprises code to:~~
~~provide a product identifier to said needs analysis module in response to attribute~~
~~information;~~
said product identifier identifies ~~a~~ at least one of the pre-generated product ~~configuration~~
configurations, and
said ~~attribute information~~ each of said one or more attributes is an attribute of said
product.

28. (Currently amended) The computer program product of claim 27,

2 wherein the code further comprises code to:

3 use ~~attribute information~~ each of said one or more attributes to retrieve said product
4 identifier from said database.

1 29. (Currently amended) The computer program product of claim 26 wherein
2 the product configurations are pre-generated product configurations and the computer
3 program product further comprises a data structure, the data structure comprising information
4 resident in said database, the information comprising:

5 product ~~identifier information~~ identifiers associated with each pre-generated product
6 configuration and reference data that links the product attribute information one
7 or more product attributes to [[a]] each pre-generated product configuration.

1 30. (Currently amended) The computer program product of claim 29,
2 wherein the product configurations are pre-generated product configurations and said data
3 structure further comprises:

4 a configuration table storing the pre-generated product configurations, and
5 an attribute table to store product attribute information one or more product attributes.

1 31. (Currently amended) The computer program product of claim 30,
2 wherein
3 said configuration table contains said product identifier ~~information~~ said attribute table
4 contains said ~~attribute information~~ one or more attributes.

1 32. (Currently amended) The computer program product of claim 30,
2 wherein the product configurations are pre-generated product configurations and
3 said attribute table comprises an attribute record comprising an attribute field containing
4 said product attribute information one or more product attributes, and an
5 intersection field containing a reference to at least one of the pre-generated
6 product configurations, and
7 said configuration table comprises a configuration record comprising a configuration
8 field containing said pre-generated product configurations; and an identifier field
9 containing said product identifier ~~information~~.

1 33. (Currently Amended) The computer program product of claim 32,
2 wherein each pre-generated product configuration describes a configuration of a product that
3 is an allowable product configurations configuration in accordance with product rules
4 governing allowable combinations of product attributes;
5 said attribute information describes an attribute of said product, and
6 said pre-generated product configuration of said product includes said ~~attribute of said-~~
7 product one or more product attributes.

1 34. (Currently amended) The computer program product of claim 32,
2 wherein the code further comprises code to:
3 access said ~~pre-generated product configuration~~ product identifier information using said
4 attribute information.

1 35. (Currently amended) The computer program product of claim 32,
2 wherein
3 said reference allows the code to access said configuration record by accessing said
4 attribute record using said ~~attribute information~~ one or more product attributes.

1 36. (Canceled).

1 37. (Currently amended) The computer program product of claim 24,
2 wherein said code further comprises code to permit identification of a product configuration
3 based on the product identifier ~~information~~.

1 38. (Canceled).

1 39. (Previously Presented) The computer program product of claim 24,
2 wherein the code further comprises a needs analysis module.

1 40. (Currently amended) The computer program product of claim 39,
2 wherein said code further comprises code to:
3 provide a configuration list to said needs analysis module in response to ~~[[a]]~~ the product
4 identifier received from said needs analysis module.

1 41. (Currently amended) The computer program product of claim 40,
2 wherein
3 said configuration list is a list of the available ~~features~~ product attributes of said product.

1 42. (Previously Presented) The computer program product of claim 40,
2 wherein said configuration list is a list of configurations of said product.

1 43. (Previously Presented) The computer program product of claim 40,
2 wherein said code further comprises code to:
3 use said product identifier to generate said configuration list from information stored in
4 said database.

1 44. (Canceled).

1 45. (Currently amended) The computer program product of claim 29 ,
2 wherein said data structure further comprises:
3 a configuration table containing said product identifier ~~information~~.

1 46. (Currently amended) The computer program product of claim 45,
2 wherein said code further comprises code to:
3 access said product configuration information by virtue of supplying said product
4 identifier ~~information~~ to a configuration service, and
5 access said database by virtue of being configured to access said database using said
6 product identifier ~~information~~.

1 47. (Currently amended) The computer program product of claim 45,
2 wherein
3 said configuration table comprises a configuration record comprising a configuration
4 field containing said pre-generated product configurations, and an identifier field
5 containing said product identifier ~~information~~.

1 48. (Currently Amended) The computer program product of claim 47,
2 wherein
3 said product configuration information describes a configuration of said product that is an

allowable product ~~configurations~~ configuration in accordance with product rules governing allowable combinations of product attributes, and said product identifier information identifies said pre-generated configuration of said product.

49. (Canceled).

50. (Canceled).

51. (Currently amended) A method to provide one or more product selections to a user in accordance with ~~an analysis of user needs~~ product related data provided by the user, the method comprising:

receiving the product related data from the user through a communication link coupled between a data processing system of the user and the computer system, ~~wherein the product related data is a member of a group of information types comprising attribute information and product identifier information;~~
processing the received product related data using resources of the computer system; ~~determining which type of information is included in the received product related data; processing, if the product related data is attribute information, the received product related data in accordance with product configuration information in order to receiving one or more product attributes and identify identifying one or more of the pre-generated product configurations stored in a database that each include the one or more product attributes, if the product related data represents the one or more product attributes meet requirements of the received attribute information;~~
receiving a product identifier and identifying each combination of attributes stored in the database that corresponds to the product identifier, if the product related data represents the product identifier one or more of pre-generated product configurations that corresponds to the received product related data, if the product related data is product identifier information represents the product identifier; and
providing each identified ~~pre-generated~~ product configuration as a product selection to the user via the communication link if the product related data represents the one or more product attributes; and

24 providing one or more product selections to the user via the communication link,
25 wherein, if the product related data represents the product identifier, each product
26 selection represents a product identifier and a respective combination of attributes
27 identified as corresponding to the product identifier.

1 52. (Currently amended) The method of claim 51, wherein the product
2 configurations are pre-generated product configurations and
3 said product identifier information identifies pre-generated product configurations, and
4 each of said pre-generated product configuration represents a product having ~~an attribute~~
5 ~~represented in said attribute information~~ one or more of the attributes.

1 53. (Currently amended) The method of claim 52, further comprising:
2 causing a needs analysis module to provide said ~~attribute information one or more~~
3 attributes to a filter service; and
4 causing said filter service to return said product identifier ~~information~~ to said needs
5 analysis module.

1 54. (Currently amended) The method of claim 51, wherein the product
2 configurations are pre-generated product configurations, the method further comprising:
3 querying a database of said computer system, wherein querying said database comprises:
4 accessing an attribute table of said database using said ~~attribute information one~~
5 or more attributes;
6 identifying at least one ~~product identifier information in a~~ database record
7 comprising the product identifier and said attribute information; and
8 accessing said ~~product identifier information in a configuration table of said~~
9 ~~database~~ said database record to identify a pre-generated product
10 configuration associated with said ~~attribute information one or more~~
11 attributes.

1 55. (Currently amended) The method of claim 54, wherein
2 said product identifier ~~information~~ is associated with said pre-generated product
3 configurations, and
4 each of said pre-generated product configurations represents a product having said

5 ~~attribute~~ one or more attributes.

1 56. (Currently amended) The method of claim 55, wherein
2 ~~said a~~ configuration table comprises said pre-generated product configurations.

1 57. (Currently amended) The method of claim 51 further comprising:
2 providing said product identifier ~~information~~ to a configuration service;
3 identifying said ~~pre-generated~~ product configuration corresponding to said product
4 identifier ~~information~~ by causing said configuration service to query a database
5 using said product identifier ~~information~~; and
6 causing said configuration service to return said identified ~~pre-generated~~ product
7 configuration.

1 58. (Currently amended) The method of claim 57, wherein the product
2 configurations are pre-generated product configurations and said product identifier
3 ~~information~~ is associated with a pre-generated product configuration in said database.

1 59. (Currently amended) The method of claim 58, further comprising:
2 causing a needs analysis module to provide said product identifier ~~information~~ to said
3 configuration service; and
4 causing said configuration service to return said pre-generated product configuration to
5 said needs analysis module.

1 60. (Currently amended) The method of claim 57, wherein the product
2 configurations are pre-generated product configurations and said querying said database
3 comprises:
4 accessing a configuration table of said database using said product identifier ~~information~~
5 to identify said pre-generated product configuration.

1 61. (Currently amended) The method of claim 60, wherein
2 each of said pre-generated product ~~configuration is are~~ associated with said product
3 identifier ~~information~~.

1 62. (Currently amended) The method of claim 51 further comprising:

receiving data indicating a user selected product, wherein the selected product corresponds to one of the identified ~~pre-generated~~ product configurations; receiving product configuration selections from the user to further configure the selected product; generating configured product data corresponding to the product configuration selections associated with the selected product and in accordance with the product configuration information; and providing the configured product data to the user via the communication link.

63. (Canceled).

64. (Currently amended) The method of claim 51, wherein said product related data includes data related to a vehicle.

65. (Currently amended) The method of claim 64, wherein said product ~~configuration~~ selections comprise a make of said vehicle.

66. (Currently amended) The method of claim 64, wherein said product ~~configuration~~ selections comprise a model of said vehicle.

67. (Currently amended) The method of claim 64, wherein said product ~~configuration~~ selections comprise a trim level of said vehicle.

68. (Currently amended) The method of claim 64, wherein said product ~~configuration~~ selections comprise an equipment level of said vehicle.

69. (Currently amended) The method of claim 64, wherein said product ~~configuration~~ selections comprise one of a price range, a vehicle type, an engine type, a fuel economy, an interior feature and a safety feature.

70. (Currently amended) An apparatus to provide one or more product selections to a user in accordance with ~~an analysis of user needs~~ product related data provided by the user, the apparatus comprising:
means for receiving the product related data from the user through a communication link coupled between a data processing system of the user and the computer system;

6 wherein the product related data is a member of a group of information types
7 comprising attribute information and product identifier information;
8 means for processing the received product related data using resources of the computer
9 system;
10 means for determining which type of information is included in the received product
11 related data;
12 means for processing, if the product related data is attribute information, the received
13 product related data in accordance with product configuration information in
14 order to receiving one or more product attributes and identify identifying one or
15 more of the pre-generated product configurations stored in a database that each
16 include the one or more product attributes, if the product related data represents
17 the one or more product attributes meet requirements of the received attribute
18 information;
19 receiving a product identifier and identifying each combination of attributes stored in the
20 database that corresponds to the product identifier, one or more of pre-generated
21 product configurations that corresponds to the received product related data, if the
22 product related data is product identifier information represents the product
23 identifier; and
24 means for providing each identified pre-generated product configuration as a product
25 selection to the user via the communication link if the product related data
26 represents the one or more product attributes; and
27 means for providing one or more product selections to the user via the communication
28 link, wherein, if the product related data represents the product identifier, each
29 product selection represents a product identifier and a respective combination of
30 attributes identified as corresponding to the product identifier.

1 71. (Previously Presented) The apparatus of claim 70 further comprising:
2 means for receiving data indicating a user selected product, wherein the selected product
3 corresponds to one of the identified pre-generated product configurations;
4 means for receiving product configuration selections from the user to further configure
5 the selected product;

6 means for generating configured product data corresponding to the product configuration
7 selections associated with the selected product and in accordance with the product
8 configuration information; and
9 means for providing the configured product data to the user via the communication link.

1 72. (Previously Presented) The apparatus of claim 70 wherein the product related
2 data includes data related to a vehicle.

1 73. (Previously Presented) The computer system of claim 1 wherein the product
2 related data includes data related to a vehicle.

1 74. (Previously Presented) The computer program product of claim 24 wherein the
2 product related data includes data related to a vehicle.